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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,155	05/15/2002	Arild Follestad	613-55	1492

23177 7590 02/17/2004

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EXAMINER

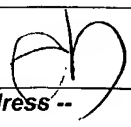
LU, C CAIXIA

ART UNIT PAPER NUMBER

1713

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/048,155	<b>Applicant(s)</b> FOLLESTAD ET AL.	
	<b>Examiner</b> Caixia Lu	<b>Art Unit</b> 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
     a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Follestad et al. (WO 98/57998).

Follestad teaches an olefin polymerization process using two or more metallocene catalyst to provide polyolefins with multimodal molecular weight distribution (page 4, 1<sup>st</sup> paragraph and page 16, the 3<sup>rd</sup> paragraph). In Example 1, Runs of 1-4 of Example 3, and Comparative Examples 3G and 3H, Follestad demonstrated ethylene polymerization or ethylene/hexene copolymerization in the presence of catalyst systems with two metallocene catalysts coimpregnated on silica. It is noted that Comparative Examples 3G and 3H demonstrate that the polyolefin with MFR<sub>2</sub> of 0.06 produced by (nBuCp)<sub>2</sub>ZrCl<sub>2</sub> (the catalyst providing more defects in the polymer chain) has higher molecular weight the polyolefin with MFR<sub>2</sub> of 0.93 produced by rac-SiMe<sub>2</sub>(2-methyl-4-phenylindenyl)<sub>2</sub>ZrCl<sub>2</sub> (the catalyst providing less defects in the polymer chain). The higher the molecular weight, the lower the MFR<sub>2</sub>. It is also noted that the prior art does not expressly teach the polymer chain defect content of the higher molecular weight fraction is at least 3 times that of the lower molecular weight fraction, the polymers disclosed in the prior art are made by processes using catalyst compositions which are identical or substantially identical to those disclosed in the instant specification. Under these circumstances, one of the ordinary skilled in the art would have expected that the

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claimed limitations would be inherent in the prior art polymers. Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, the burden of proof is shifted to the applicant to show an unobvious difference. In re Fitzgerald, 205 USPQ 594. In re Fessmann, 180 USPQ 324. Applicants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

In the instant amended claims, applicants further limit the second metallocene (the catalyst providing more defects in the polymer chain) to bis(pentamethylcyclopentadienyl) zirconium dichloride. While Follestad does not use bis(pentamethylcyclopentadienyl) zirconium dichloride in the working examples, Follestad does teach that metallocene catalysts disclosed in EP-A-1280245 included bis(pentamethylcyclopentadienyl) zirconium dichloride can be used in the catalyst composition. In Comparative Example 1A of page 11 of EP-A-1280245, bis(pentamethylcyclopentadienyl) zirconium dimethyl produced polyolefin with weight average molecular weight of 139,000 which is in the range of the higher molecular weight polyolefin component of Follestad. bis(pentamethylcyclopentadienyl) zirconium dichloride is also taught in EP-A-1280245 as a functional equivalent catalyst of bis(pentamethylcyclopentadienyl) zirconium dimethyl (page 8, lines 19-22). A skilled artisan would have recognized that bis(pentamethylcyclopentadienyl) zirconium dichloride is the precursor of bis(pentamethylcyclopentadienyl) zirconium dimethyl, i.e., when bis(pentamethylcyclopentadienyl) zirconium dichloride is used, it always is

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converted to bis(pentamethylcyclopentadienyl) zirconium dimethyl during or prior to the polymerization.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Follestad's teaching to prepare olefin polymers in the presence of Follestad's metallocene catalyst mixture and to choose bis(pentamethylcyclopentadienyl) zirconium dichloride as the metallocene catalyst providing more defects in the polymer chain since such is taught in Follestad and bis(pentamethylcyclopentadienyl) zirconium dichloride is one of the most economical and readily available metallocene and in the absence of showing criticality and unexpected result.

### ***Response to Arguments***

3. Applicant's arguments filed November 25, 2003 have been fully considered.

The rejections over Yang et al. (US 5,539,056) are withdrawn because Yang does not anticipate the limitation of a support material coimpregnated with at least two metallocene catalyst of the instant claims.

The rejections over Follestad is now modified to be under 35 U.S.C. 103(a) rather than under 35 U.S.C. 102/103 due to the newly added limitations. Applicants allege that use of bis(pentamethylcyclopentadienyl) zirconium dichloride in the catalyst composition gave surprising low comonomer incorporation and etc.; however, no evidence has been provided. Thus, the rejections as cited above are maintained.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-0994.



Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713